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ABSTRACT

This paper reviews literature-based giftedness definitions which have evolved as different manifestations of giftedness have been recognized. Various fields of giftedness are outlined, including mental, creative, specific academic, psychosocial (leadership), performing arts, kinesthetic (athletic), manipulative skills, and mechanical/technical/industrial. An emerging view of creativity is presented, and the relationship between intelligence and creativity is analyzed. The point is stressed that the gifted child should always be seen in terms of his/her totality (physical, social, emotional, mental) and not in terms of giftedness only. (JDD)

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CREATIVITY AND GIFTEDNESS - A COMPARATIVE PERSPECTIVE

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Creativity and Giftedness

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1. INTRODUCTION

While working on this paper, I came upon a quotation that may be well-known to most of us, because it is appropriate to our field of work:

"Man cannot discover new oceans unless he has the courage to lose sight of the shore".

It is common knowledge that we are experiencing an accelerated and unforeseen change in the field of education. Because of this change there are certain problems and even more may originate if we are not prepared to lose 'sight of the shore'.

Certain of these problems and questions centre around the gifted and creative. One is thankful for the time, money and energy that have gone into work on these two aspects. New fields have opened, many questions have been answered but new questions have cropped up. In spite of all the work done on the basic questions like what is meant by "giftedness"?, what is meant by "creativity"?, what is the relationship between giftedness and creativity?, no answers, to the satisfaction of everyone busy with these aspects, have been given.

It is the aim with this presentation to give special attention to the meaning of giftedness and creativity. The relationship between giftedness and creativity will also receive attention and special attention will be given to the fact that creativity is seen as as one of a variety of fields in which giftedness may occur. I shall also refer to empirical work on the relationship between creativity on the one side and high intellectual ability as a manifestation of giftedness, on the other.

2. THE CHANGING DEFINITIONS OF GIFTEDNESS

To be able to plan for the education of gifted children, it is essential to have a definition to work with. This definition should include all children who consistently perform at an exceptionally high level in different fields. To be able to present a definition of giftedness, it is essential to refer to certain descriptions and definitions that have been made through the years.

Recent findings have made the situation more complex that it had been in past decades. Until about 1960, an IQ score was considered all that was necessary to identify gifted children. Children with an IQ above a certain value were considered to be gifted and those with a lower IQ value were the unfortunate non-gifted ones. This minimum value ranged from 130 to 150. As the same IQ-test was not used in all the instances, it was not possible to compare these values. According to Painter, today an IQ of 130 is probably the one which is most commonly used[1]. This implies that 2,28 per cent of a school population usually achieves an IQ score of 130 and higher when the NSAIS is used in RSA and the Revised Wechsler Individual Intelligence Scale for Children in the USA. In

Israel Dr. Erika Landau uses an IQ-score of 140 as criterion[2]. In the USA, when using the Wechsler and Stanford-Bine Individual Intelligence Scales, an IQ-score of 145 is the criterium[3].

A broadened concept of giftedness, designed to include more than those characteristics measured by intelligence tests received additional momentum by the work of Getzels and Jackson whose work centered around the differentiation between creativity and giftedness and the extensive work of Torrance on creativity and giftedness. It thus became possible to think of other aspects that should be included when defining giftedness.

It is not possible to give attention to all the different definitions that accepted a more complex description of giftedness. One of these is the three-ring conception of Renzulli, who sees giftedness as the interaction between above-average, not necessarily superior, general ability, high levels of task commitment and high levels of creativity. Each of these aspects plays an equal part in contributing to giftedness[4].

According to Gallagher[5] the ability to work with internally learned symbol systems, is the essential aspect of giftedness. This enables the gifted student to learn on his own, to use his creative ability to form new products without consulting anyone. The symbol systems that are thus formed, give an indication in which way the student is gifted. Subjects like mathematics, music, chemistry, all have their own symbol system and students can be gifted in any of them.

When using the term giftedness, no indication is given of the particular nature of the child's exceptional talent and it is therefore necessary to be specific. When using the concept mental giftedness, it relates to the child endowed with superior intellectual abilities. Likewise children may be gifted in the fields of leadership, creativity, singing, etc. Later on in the presentation attention will be given to this differentiation.

When referring to giftedness, it is important to remember that this aspect is only part of the total child. The child must be seen and valued with regard to his physical, social, emotional, mental life and it must be remembered that giftedness is always an intimate, interwoven part of all these different aspects. Giftedness shows to better advantage when the child has achieved a balance between the above mentioned aspects of his life. When a child has attained this balance, he should be positively directed towards life as a whole and towards achieving his full potential. This implies that the concept of giftedness has totality charcteristics comprising the child as a whole.

It therefore becomes clear that to come to an acceptable definition of giftedness, provision must be made for all the different manifestations of giftedness. Such a definition is for example the one of Everett:
"The gifted child is one who shows consistantly remarkable performance in any worthwhile

line of endeavor. Thus we shall include not only the intellectually gifted but also those who show promise in music, dramatics, mechanical skills, and social leadership"(6).

According to the US Office of Education definition "children capable of high performance include those with demonstrated achievement and/or potential ability in any of the following areas, singly or in combination:

General intellectual ability
Specific academic aptitude
Creative or productive thinking
Leadership ability
Visual and performing arts
Psychomotor ability"(7).

Rice distinghuished more or less the same manifestation of giftedness as the above mentioned plus the following two:

"Manifested skills. The craftsman, painter, or carpenter represent obvious cases.
The mechanical-technical-industrial complex of skills. This category could be broken down further into such categories as technical skills, computational skills, scientific-technical skills, etc."(8).

The concept giftedness is therefore an encompassing concept, while giftedness in the fields of creativity, leadership, etc. is a specific giftedness. If the statement is made: "This boy is really gifted", the question will be: "In what field is he gifted?".

3. THE VARIOUS FIELDS OF GIFTEDNESS

To me giftedness is genetically determined and a gifted person is endowed with one or more potential specific abilities in the fields or areas of giftedness. These specific areas of giftedness are latent and the positive influence of the environment can assure that the maximum potential in each of the fields is attained. The areas in which the child may be capable of high performance are the intellectual and creative areas, specific academic and leadership ability, in the performing arts, kinesthetic (athletic) ability, in manipulative skills and ability in the mechanical - technical - industrial area.

3.1 Mental giftedness

When referring to mental giftedness, a specific IQ-score is used as criterium. Reference to this aspect has previously been made in this presentation.

3.2 Creative giftedness

As creativity itself and the relationship between creativity and giftedness will receive attention later on in this presentation, nothing more will at this stage be said.

3.3 Specific academic giftedness

When a child excels in a particular subject area and his achievement is at an advanced academic level, he is seen as gifted in that specific subject area. This specific academic giftedness relates to a school subject like Mathematics or History, etc. To be able to excel in a specific academic subject the child usually is mentally gifted. Most of the special school programs of today like acceleration, enrichment or special classes have been developed specifically for this group. The reason may be that this field has been studied more than any of the other fields.

3.4 Psychosocial giftedness (leadership)

Leadership potential refers to the ability to influence other people. This ability stems from an exceptionally keen understanding of other people expecially their peer group. When psychosocial giftedness manifests itself in our midst, it is unmistakable. Leaders appear to have the ability for empathy which enable them to foresee the way others will behave and to act accordingly[9]. Although these children are of above-average intelligence, they do not necessarily seem to be mentally gifted.

3.5 Giftedness in the performing arts

When we include those skilful and complex kinds of behaviour like singing, musicianship, dramatics or the creative dance, we include those children who are gifted in the performing arts and who are able to entertain, affect and influence vast audiences. "Essential characteristics in the composition of a gifted dancer is a spontaneous and ebullient desire to express the inner self which is given a feeling of release by hearing music and interpreting it with physical movements"[10].

3.6 Kinesthetic (athletic) giftedness

The very succesful professional sportsman of today may become a millionare. This fact acts as stimulus for sportsmen to try to rise to the top. On the tennis courts of the world many youngsters, especially girls are found, battling it out against the top players, and holding their own. The saying goes that be succesful on the sportsfield only ten percent ability is needed, while the rest that is asked is hard work. This implies that a good coach can work wonders, but what is really necessary is a great amount of intrinsic motivation. The large amounts of prize money that can be won, act as extrinsic motivation for these sportsmen with at least ten percent giftedness to get a bite of the apple.

On the sports fields of our schools the excellent sportsman finds enough opportunities to excel even on national level. Many school children are included in senior teams and are characterized by exceptional ball sense, eye-hand co-ordination, dexterity, grace, etc. According to Painter a child gifted in sport will be of above average, but not necessarily of high intelligence[11].

3.7 Giftedness in manipulative skills

"Of particular importance to this kind of talent is the ability to coordinate what the eye observes with what the hand produces".[12] To this kind of giftedness is also referred as psychomotor capabilities. This person must have a very keen ability to perceive and understand the world around him and the capability to express himself through the medium he chooses to work with. The painter, sculptor, metalworker, ornamental writer are some of the obvious cases. Other examples are the carpenter, tailor, flower arranger and art needleworker.

3.8 Giftedness in the mechanical - technical - industrial area

When analising the work tasks involved in this area, clear indications are that a high degree of mechanical aptitude is necessary. There is a very high demand for people gifted in this area in industry and commerce. "While the master mechanic, machinist, draftsman, or computer programmer are highly valued by industry after they leave school, there is a tendency to neglect this sort of talent within the school setting."[12]

Attention have been given to the different fields in which high performance may be viewed as indications of giftedness. Special attention will now be given to one of these fields, namely creativity.

4. VIEWS ON CREATIVITY

4.1 An emerging view on creativity

Creativity was once seen as "the prerogative of the gods".[13] Only fairly recently have there been more attempts to study it as a natural phenomenon. The different definitions that have come forward through the years, have not given us a definition that is generally accepted. A recent attempt of Jones [14], combines some of these definitions:

> "Creativity is a combination of flexibility, originality and sensitivity to ideas which enables the thinker to break away from usual sequences of thought with different and productive sequences, the results of which give satisfaction to himself and possibly to others."

Most authors put much emphasis on novelty, the production of new ideas and combinations, but at the same time point out that schizophrenic drawings, or children's mistakes in arithmetic, may be novel without being creative. The addition of 'acceptability' or 'value', or 'appropriateness' as a criterion, leads to problems, because it is known that scientific discoveries (e.g. Mendelism), or new art forms (e.g. Surrealism), or religious movements (e.g. Christianity) are often rejected or ignored at the time, though recognized later.[15]

Because of the realization of the complexity of the whole aspect of creativity together with the emphasis on the extensiveness of giftedness, as shown in previous paragraphs,

special attention must now be paid to the field of creative giftedness.

4.2 Creative giftedness

A possible reason for the wide variety of definitions of creativity, may be that every person sees his definition in the context that he uses it. That may be the reason why some definitions are viewed as typical of behaviorism or humanism etc. or typical for the arts or industry.

From an educational viewpoint I cannot see creativity in any other way than as a combination of different factors. To me then, creativity is a potential ability consisting of a combination of originality, sensitivity to ideas, flexibility and fluency. A creative person will be sensitive to problems, deficiencies in knowledge, will be searching for solutions and testing and retesting ideas that he thinks of. Finally he will come up with a proposal as solution for the problem.

Painter makes the following statement: "Creatively gifted children have the facility of viewing things from a new or unusual angle and as a result they are often able to produce novel ideas and work which has originality. To be considered creatively gifted in maturity, an individual must fulfil at least three conditions. These are the posession of the ability to innovate in thought or action, apply this capacity in carrying out some task and carry through the development of a first idea by examining and improving it in its relationship to other occurrences in the real world or by its application to existing conditions of life. That is, the creatively gifted person must not only have originality of thought but also be able to make it productive and so meaningful to other people." [16]

When working with children in the classroom and outside, one is continually impressed by the wonderful magnitude and complexity of this one human ability. Some children are astonishingly fluent in expressing themselves verbally, but find difficulty in working with symbols. Others show wonderful originality in the solution of mathematical work, while having trouble in verbal expression. These children are therefore creatively gifted in the area or areas that they show a remarkable ability in.

When analizing the creative process, the question arises through which stages this process goes? Generally four stages or phases are distinguished, namely:

(i) Preparation - during this stage the problem is investigated.
(ii) Incubation - this is the waiting period when the preliminary work has been done and conscious thought about the problem is suspended and unconscious processes work.
(iii) Illumination - now the solution breaks into consciousness.
(iv) Verification - the idea is tested out and if necessary changed, modified and elaborated [17]

The fact that four stages during the creative process are generally accepted, does not imply that these stages are clearly distinguishable or that they follow a set pattern. These stages are generally interwoven and the creative process is seen as a single process. The second stage, namely incubation may sometimes seem missing because the illumination phase appears immediately.

In some cases the four stages do occur clearly, e.g. the solution of a mathematical problem. Firstly the problem is investigated, after which incubation occurs. Sometimes the solution is seen in an instant, while at other times the problem is left for a time, while still thinking about it. When the solution is seen, the fourth stage must follow when the solution is put forward in an orderly fashion.

I hope that, at this stage of the presentation, it has become clear that I see creativity as one of the fields of giftedness. Likewise mental ability is seen as another field. There was a time when intelligence was seen as the only manifestation of giftedness. Nowadays intelligence is seen as one way of determining a possible field of giftedness.

The relationship between creativity and intelligence has always interested researchers in the fields of psychology and education and therefore in conclusion I want to refer to some findings in this field.

5. THE RELATIONSHIP BETWEEN INTELLIGENCE AND CREATIVITY

The work of Getzels and Jackson is of the best known in this field.[18] They refer to various investigations done before their own. As early as 1898, Dearborn found the correlation coefficient between productive imagination which they saw as an indication of creativity and intelligence, to be very low. In 1930 Andrews found correlation coefficients of 0,15; 0,02 and 0,03 between intelligence and three tests for imagination.[19] Getzels and Jackson themselves found values of 0,37; 0,15; 0,30; 0,12 and 0,39 between different tests for creativity and intelligence. Wallace and Kogan found a correlation coefficient of 0,10 after they had come forward with ten tests for both creativity and intelligence.[20] There were certain researchers who found larger values of the correlation coefficients than preciously mentioned. Hason and Butcher found a positive and significant correlation coefficient between creativity and intelligence [21], while Schlicht and Anderson found a value of 0,30 that was significant.[22]

All these values were found when working with persons whose intelligence and creativity ranged from low to high. What we really are interested in, is the relationship between high intelligence and high creativity.

In 1965 Ledlie found that people with high intelligence did significantly better in creativity tests than the rest of the group.[23] In 1961 Holland found low values of the correlation coefficient between creativity and intelligence.[24] Meer and Stein found a

significant relationship between intelligence and the creativity of physicists without a doctorate but no significant relationship for physicists with a doctorate.[25]

In an empirical study I worked with 191 high school children from a certain high school in the Orange Free State. An originality test and a test for sensitivity to problems were applied and the children's IQ-scores were obtained.

Correlation coefficients between verbal, non-verbal and total IQ-scores as measurements of intelligence and the scores obtained in the originality test and the test for sensitivity for problems as indications of creativity were obtained for the boys, the girls and the group as a whole. Ten of these correlation coefficients were low values but significant, while eight of the values were not significant.

When analizing the scatter of the marks, it was found that pupils with high IQ-scores obtained high as well as low marks in the creativity tests, while those with low IQ-scores generally obtained low marks in the creativity tests. Those who obtained low marks in the creativity tests, got from low to high IQ-scores, while those with high creativity test marks generally obtained high IQ-marks.

These and other findings about the relationship between intelligence and creativity clearly imply that these two human abilities are largely independent from one another. High intelligence and high creativity are indications of giftedness, but giftedness in a specific field, namely that of mental giftedness and that of creative giftedness respectively.

6. CONCLUSION

The realization does exist today that an IQ-score is not the only manisfestation of giftedness, but that it is only an indication of one of the fields of giftedness. Giftedness is seen as consisting of a wide range of possible fields as mentioned in this presentation. This awareness comes at a time when the gifted are needed because of more and comprehensive demands that are made over a wide range of fields.

When considering the education of the gifted, care must be taken that not the cognitive aspect only, receives attention. The child must always be seen and valued in terms of his physical, social, emotional and mental life. Children are an invaluable part of the creation and may never be exploited in a selfish way. When 'losing sight of the shore', in your planning, do remember never to 'lose sight of the total child'.

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